

REMARKS

Reconsideration of the allowability of the present application is requested respectfully.

Status of the Claims

Claims 1 to 66 were acted upon by the Examiner in the Office Action dated February 26, 2004. Claims 11 to 18, 31 to 38, and 47 to 66 have been withdrawn. Claims 27 to 30 and 43 to 46 have been deemed allowable over the art of record. Claims 1 to 9 have been amended. Claims 2, 7, and 10 have been cancelled. No claims have been added. Accordingly, Claims 1, 3 to 6, 8 to 10, 19 to 30, and 39 to 46 are presented for examination.

Support for Amendments

Claims 1, 3 to 6, and 9 have been amended to recite "SEQ ID NO:1" instead of "SEQ ID NO:10". Support for these amendments is found on page 4, lines 24 to 27, of the application. Claim 8 has been amended to depend from Claim 1. Claim 9 has been amended to include the recitations of Claim 10.

ARGUMENTS

The Objections to the Specification

The specification has been objected to for not identifying the sequences of Figure 1, 2, and 4 in the description. Applicants have amended the Brief Description of the Drawings to include sequence identifiers for the sequences of Figure 1, 2, and 4. Accordingly, applicants respectfully request that the Examiner's objection to the specification be withdrawn.

The §112, First Paragraph, Rejections of Claims 2 to 5, 7, and 8

The Examiner has rejected Claims 2 to 5, 7, and 8 under 35 U.S.C. §112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the art that the inventor had possession of the invention at the time of filing.

Applicants respectfully traverse the rejection.

Claims 2 and 7 have been cancelled. Claim 8 has been amended to depend from Claim 1. Accordingly, the rejections to Claims 3 to 6 must be addressed.

Applicants submit that the Examiner has misinterpreted the limitations of Claims 3 to 6. Claims 3 to 6 are directed to nucleic acids that are characterized by their level of identity to SEQ ID NO:1. There are no functional limitations in these claims. Accordingly, the Examiner's assertion that the specification provides no guidance as to what constitutes a functional polypeptide is misapplied. Claim 3 is directed to a polynucleotide that is 80% identical to SEQ ID NO:1. Considering the wide availability of programs that can align nucleotide sequences and determine percent identity, it would be routine for the skilled artisan to identify nucleic acids that are 80% identical to SEQ ID NO:1. Simply put, the skilled artisan would recognize that applicants, upon determining the sequence of a nucleic acid, could readily determine if the nucleic acid was 80% identical to SEQ ID NO:1. Similar arguments can be made for Claim 4,

which is directed to nucleic acids that are 85 %, 90 %, 95 %, or 98 % identical to SEQ ID NO:1.

Claim 5 is directed to nucleic acids that hybridize under high stringency conditions to SEQ ID NO:1. Hybridization and high stringency conditions are discussed on page 15, line 22, to page 18, line 3, of the application. Even without this disclosure, the skilled artisan would recognize that hybridization techniques have been available for decades and that applicants would be able to utilize such techniques to identify hybridizable nucleic acids. Once a hybridizable nucleic acid is identified, sequencing of the nucleic acid is routine.

Claim 6 is directed to a nucleic acid comprising SEQ ID NO:1 itself. As applicants have provided the nucleotide sequence for SEQ ID NO:1, it is clear that applicants were in possession of SEQ ID NO:1.

Claims 3 to 6 are all also directed nucleic acids that are complementary to the nucleic acids described above. As noted above, Claims 3 to 6 all require that sequences be known, or readily determinable. Such techniques to determine nucleic acid sequences are routine. Even more routine is determining the complementary sequence to a known sequence.

The Examiner asserts that a critical element to these claims is the function of any polypeptides encoded by these nucleic acids. Applicants submit that as the claims are directed to the nucleic acids themselves, without any functional limitations other than the ability to hybridize (Claim 5), the Examiner's assertions in this regard need not be addressed.

In view of the above, applicants respectfully request that the rejection of Claims 3 to 6, under 35 U.S.C. §112, first paragraph, be withdrawn.

The §112, Second Paragraph, Rejections of Claims 1 to 10, 19 to 26, and 39 to 42

The Examiner has rejected Claims 1 to 10, 19 to 26, and 39 to 42 under 35

U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the invention.

The Examiner has asserted that Claims 1 to 10, 19 to 26, and 39 to 42 are indefinite because the phrases "of a complementary polynucleotide sequence" or "a complementary polynucleotide sequence" do not clearly indicate to what sequence the complementary polynucleotides is complementary. Applicants have canceled Claims 2, 7, and 10. Applicants have amended Claims 1, 3 to 6, and 9 to recite "An isolated nucleic acid...or of a complementary polynucleotide sequence of said isolated nucleic acid." Accordingly, it is now clear, in Claim 1, for example, that the complementary polynucleotide sequence must be complementary to an isolated nucleic acid of SEQ ID NO:1.

In view of the above amendments, applicants respectfully request that the rejection of Claims 1, 3 to 6, and 9, and those claims dependent thereon, that is, Claims 8, 19 to 26, and 39 to 42, under 35 U.S.C. §112, second paragraph, be withdrawn.

The §112, Second Paragraph, Rejections of Claims 2 to 10, 21, 22, 24, 26, 40, and 42

The Examiner has rejected Claims 2 to 10, 21, 22, 24, 26, 40, and 42 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the invention.

The Examiner has asserted that 2 to 10, 21, 22, 24, 26, 40, and 42 are indefinite because the claims cite SEQ ID NO: 10 as a polynucleotide sequence, while SEQ ID NO:10 is a polypeptide sequence. Applicants have canceled Claims 2, 7, and 10. Applicants have amended Claims 3 to 6, and 9 to recite "SEQ ID NO:1", instead of "SEQ ID NO:10". As SEQ ID NO:1 is a polynucleotide sequence, Claims 3 to 6, and 9, and those claims dependent thereon, that is, Claims 8, 21, 22, 24, 26, 40, and 42 are no longer indefinite.

In view of the above amendments, applicants respectfully request that the rejection of Claims 3 to 6, 8, 9, 21, 22, 24, 26, 40, and 42 under 35 U.S.C. §112, second paragraph, be withdrawn.

The 35 U.S.C. §102 Rejections

Claims 1 to 6, 19, 21, and 23 to 26 have been rejected under 35 U.S.C. §102(b) as being anticipated by Bejanin et al. (J. Neurochemistry 58:1580-1583 (1992)). Bejanin et al. discloses a complementary polynucleotide.

The Examiner has asserted that Claims 1 to 6, which recite the phrases "of a complementary polynucleotide sequence" or "a complementary polynucleotide sequence", do not clearly indicate to what sequence the complementary polynucleotides is complementary. Applicants have canceled Claims 2, 7, and 10. Applicants have amended Claims 1, and 3 to 6 to recite "An isolated nucleic acid...or of a complementary polynucleotide sequence of said isolated nucleic acid." Accordingly, it is now clear, in Claim 1, for example, that the complementary polynucleotide sequence must be complementary to an isolated nucleic acid of SEQ ID NO:1.

As Claims 1 to 6 no longer are directed to any polynucleotide that hybridizes with any nucleic acid, Bejanin et al., which does not disclose SEQ ID NO:1 or a sequence complementary to SEQ ID NO:1, no longer anticipates Claims 1, and 3 to 6, and those claims dependent thereon, that is, Claims 19, 21, and 23 to 26.

In view of the above amendments, applicants respectfully request that the rejection of Claims 1, 3 to 6, 19, 21, and 23 to 26, under 35 U.S.C. §102(b), in view of Bejanin et al., be withdrawn.

Claims 1 to 7, 9, 19, 21, and 23 to 26 have been rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,566,496 (hereafter "the '496 patent"). The '496 patent discloses a complementary polynucleotide.

The Examiner has asserted that Claims 1 to 7, which recite the phrases "of a complementary polynucleotide sequence" or "a complementary polynucleotide sequence", do not clearly indicate to what sequence the complementary polynucleotides are complementary. Applicants have canceled Claims 2, 7, and 10. Applicants have amended Claims 1, 3 to 6, and 9 to recite "An isolated nucleic acid...or of a complementary polynucleotide sequence of said isolated nucleic acid." Accordingly, it is now clear, in Claim 1, for example, that the complementary polynucleotide sequence must be complementary to an isolated nucleic acid of SEQ ID NO:1.

Accordingly, Claims 1, 3 to 6, and 9 are no longer directed to any polynucleotide that hybridizes with any nucleic acid.

Furthermore, nucleotides 463 to 554 of SEQ ID NO:19 of the '496 patent are identical to nucleotides 762 to 853 of SEQ ID NO:1 of the present application. Thus, the '496 patent discloses a nucleic acid comprising 92 identical consecutive nucleotides of SEQ ID NO:1. Accordingly, Claim 1 has been amended to recite

1. An isolated nucleic acid comprising a polynucleotide sequence comprising at least 100 consecutive nucleotides of SEQ ID NO: 1 ~~10~~, or of a complementary polynucleotide sequence of said isolated nucleic acid.

Support for this amendment is found on page 30, lines 1 to 4, of the application. Thus, as , the '496 patent only discloses a nucleic acid comprising 92 identical consecutive nucleotides of SEQ ID NO:1, the '496 patent does not anticipate Claim 1. As Claims 19, 23, and 25 all depend directly or indirectly from Claim 1, these claims are also not anticipated by the '496 patent.

Claim 2 has been canceled.

Claim 3 is directed to nucleic acids comprising 80% identity with SEQ ID NO:1. Claim 4 is directed to nucleic acids comprising 85%, 90%, 95%, or 98% identity with SEQ ID NO:1. The Examiner has not asserted what percent identity SEQ ID NO:19 of the '496 patent has with SEQ ID NO:1 of the present application. As the Examiner has

not asserted that the '496 patent anticipates Claims 3 and 4, applicants assume that the '496 patent does not anticipate Claims 3 and 4.

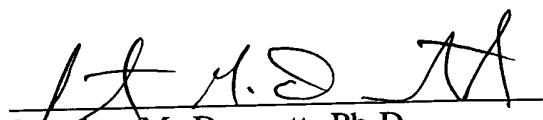
Claim 5 is directed to nucleic acids that hybridize under high stringency conditions with SEQ ID NO:1 and nucleic acids that are complementary to SEQ ID NO:1. The Examiner has not asserted whether or not SEQ ID NO:19 of the '496 patent would hybridize under high stringency to SEQ ID NO:1 of the present application or hybridize to nucleic acids that are complementary to SEQ ID NO:1.

Claim 6 is directed to nucleic acids comprising SEQ ID NO:1. As SEQ ID NO:1 is not disclosed in the '496 patent, the '496 patent does not anticipate Claim 6. As Claims 21, 24, and 26 all depend directly or indirectly from Claim 6, these claims are also not anticipated by the '496 patent.

Claim 7 has been canceled.

Claim 9 has been amended to include the limitations of Claim 10. Claim 9 now recites "wherein the nucleotide probe or primer comprises a marker compound". As the '496 patent does not disclose primers comprising labeling markers, the '496 patent does not anticipate Claim 9. In view of the above amendments, applicants respectfully request that the rejection of Claims 1, 3 to 6, and 9, 19, 21, and 23 to 26, under 35 U.S.C. §102(b), in view of the '496 patent, be withdrawn.

Respectfully submitted,


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